Before the
Federal Communications Commission
Washington D.C. 20554

In the Matters of	)
	)
IP-Enabled Services	) WC Docket No. 04-36
E911 Requirements for IP-Enabled Service Providers	) WC Docket No. 05-196
	)

COMMENTS OF COMMUNICATION FOR THE DEAF ON E-911 REQUIREMENTS FOR IP-ENABLED SERVICE PROVIDERS

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SUMMARY

Deaf and hard of hearing individuals need assurances that their access to emergency services will remain in tact as relay services shift from PSTN technologies to Internet-based technologies. In order to ensure that such access is functionally equivalent to the level of access being provided to voice over the Internet (VoIP) users, the FCC should prohibit any VRS provider receiving compensation from the Interstate TRS Fund from blocking access to or from other providers. If this is not done, when an emergency occurs, consumers using the provider with the restricted network could be forced to wait long periods of time to make an emergency call, yet not have the ability to summon assistance through a different VRS provider. Long answer times remain a real threat to the health and safety of these consumers, notwithstanding new answer speed service levels set by the Commission.

The FCC should also require VRS providers to provide easy numbering access that will enable public safety answering points (PSAPs) to return calls to emergency callers. At present, there is no numbering scheme for VRS users that is consistent or at all functionally equivalent to the numbering scheme administered through the NANP that is now used by VoIP customers. The numbering system for VRS that has been created by the dominant VRS provider is exclusive; it prevents consumers from using those numbers across different VRS providers. Among other things, the restrictive system created by one VRS provider makes it exceedingly difficult for consumers to receive return calls from individuals outside that provider's network, both because unsolicited incoming calls may be directed to the wrong video receiving device (the correct device may be turned off) or because the incoming calls may be rejected by the customer's

Internet router. Just as hearing Americans are able to have a telephone number for emergencies as they switch their voice communications from the PSTN to the Internet, so too should deaf and hard of hearing people have easy numbering access for emergencies.

The many distinctions that exist between VRS and traditional (TTY based) TRS and between VRS and VOIP services necessitate additional guidance from the FCC before a mandate for the handling of VRS emergency calls can be implemented. Guidance is specifically needed on use of the existing VoIP infrastructure for VRS, the establishment of a joint user VRS registry, technical standardization, validation of location, and the need for an audio channel.

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I. Introduction

Communication Service for the Deaf, Inc. (CSD) submits these comments in response to the Federal Communications Commission's (FCC's) Notice of Proposed Rulemaking on E-911 requirements for IP-enabled service providers.[1] CSD is a private, non-profit organization that provides programs and services intended to increase communication, independence, productivity, and self-sufficiency for all individuals who are deaf and hard of hearing. Originally established as part of the South Dakota Association of the Deaf in 1975, CSD provides direct assistance to individuals through education, counseling, training, communication assistance, and telecommunications relay services. CSD provides Internet-based and video relay services (VRS) as a subcontractor to Sprint throughout all fifty states and the United States territories. CSD considers itself both a consumer and provider of VRS, and as such, urges the FCC to adopt mandates for

[1] *In the Matters of IP-Enabled Services, E911 Requirements for IP-Enabled Service Providers*, First Report and Order and Notice of Proposed Rulemaking, WC Dockets No. 04-36, 05-196, FCC 05-116 (June 3, 2005) (*"VoIP E911 R & O*").

the handling of VRS emergency calls that reduce confusion for consumers and provide consistent and uniform emergency access across all relay service provider platforms.

The incidence of relay calls made with TTYs over the traditional public switched telephone network has been steadily declining in recent years, as evidenced by the increasing IP burden borne by the Interstate TRS fund and the declining TRS burden borne by state TRS programs. By contrast, the flexibility and mobility offered by IP-based relay services, as well as the lure of being able to converse in sign language through video relay services (VRS), have attracted a growing constituency of deaf and hard of hearing individuals. VRS, in particular, is being adopted as the principal mode of telephone communication by many deaf individuals needing to use sign language to communicate naturally and in real time. This form of relay service has also afforded many deaf individuals who previously had no way of conducting communication over a distance, including senior citizens and children, an opportunity to finally benefit from our nation's telecommunications technologies.

Just as VoIP users have been making the transition from the PSTN to the Internet, so too have new Internet-based relay technologies caused increasing numbers of deaf and hard of hearing people to replace their PSTN-based telephone devices and services with Internet-based computers and video devices and services. And just like voice telephone users, these deaf and hard of hearing individuals need assurances that their access to emergency services will remain in tact. Although the requirement for relay providers to handle VRS 911 emergency calls is presently waived until January 2006, and the requirement to handle voice-to-text Internet relay emergency calls is waived until January

2008,[2] CSD believes that emergency services that enable VRS consumers to access police, fire, and medical assistance must ultimately be made available to the same extent that they are now available to PSTN users and must soon be available to VoIP users. In achieving this task, the FCC needs to ensure that solutions are developed that are compatible between and among all relay systems to avoid confusion and delay for deaf and hard of hearing consumers.

II. The FCC Must Prohibit Blocking of Internet Access by any VRS Provider

As things now stand, VRS providers are unable to guarantee a level of emergency access envisioned by the FCC in its recent IP-enabled E911 Report and Order. In large part, this is because one dominant VRS provider that holds over 65% of the market share imposes an exclusivity arrangement that technically and contractually blocks its VRS customers from making or receiving calls through other VRS providers.[3] Although providing such interoperability is technically feasible, this provider intentionally imposes a block on all other VRS Internet sites, to prevent calls made through its device from being handled by its competitors. It is an unfortunate fact that consumers using this provider also have experienced the longest waiting times (as compared to the waiting times of other providers) in order to place their VRS calls.

In February of 2005, deaf and hard of hearing consumers, concerned about this provider's long answer speeds, filed a petition with the FCC, asserting that the dominant provider's restrictive blocking practice denied functionally equivalent communication

[2] *See* FCC Orders cited at *VoIP E911 R & O* at ¶23 n.70.
[3] The provider conditions the provision of free video equipment to its customers on this exclusivity arrangement. Customers who would otherwise purchase this equipment without such restrictions are prevented from doing so, because the equipment is not available for retail sale.

service as required by the Communications Act.[4] The petition urged the FCC to prohibit any VRS provider receiving compensation for VRS from the National Exchange Carriers Administration (NECA) from blocking calls through other relay services. CSD has been among the many national organizations representing deaf and hard of hearing that have continued to support this petition. We and others have maintained that the dominant provider's exclusivity policy can pose extreme dangers and lead to tragedy in an emergency situation.

Specifically, when an emergency occurs, a consumer dialing into the provider with a restricted network has no way of accessing an alternate provider if the dominant provider is operating at full capacity; when this occurs, the consumer has no choice but to wait several minutes to reach one of the VRS interpreters working for the dominant provider. As the emergency situation worsens and the consumer is forced to continue waiting, he or she is likely to become increasingly frightened, distressed and anxious, remaining completely powerless to summon assistance through all other VRS providers whose web addresses remain blocked.[5]

Recently, the FCC announced a new rule to require VRS providers to answer calls within three minutes by January 2006, within two and a half minutes six months later, and within two minutes six months after that. While imposition of an answer speed standard will most certainly help VRS to meet the functionally equivalent mandates of

[4] Petitioners cited 47 U.S.C. §225, as added by Title IV of the Americans with Disabilities Act. Petitioners also alleged various other violations of the Communications Act, including violations of Section 1, requiring universal service; Section 201, prohibiting unjust or unreasonable practices; Section 202(a), prohibiting unreasonable discrimination; Section 251, requiring telecommunications carriers to interconnect with one another and provide dialing parity, and prohibiting the installation of network features or capabilities not consistent with Sections 255 and 256.

[5] Blocking access to other relay providers also makes inefficient use of the limited interpreting services available in the United States: it allows an exclusive pool of sign language interpreters to only be used to serve a select group of customers, rather than making the entire pool of American sign language interpreters available to all relay providers.

the Communications Act, in an emergency, three minutes – and even two minutes – can seem like an eternity. 911 emergency personnel are the first to note the importance of speed in successfully addressing an emergency: response time in *seconds*, not *minutes* is desired.

Even more troubling, however, is that because the new three minute rule is based on an *average* speed of answer to be calculated on a *monthly* basis, actual answer times at various times of the day can be far greater than the mandated three minutes. Specifically, there will still be time for a VRS provider to "recover" and meet the service level requirements even if the provider experiences large spikes in call volume that result in long answer times (several minutes to even more than one hour at times).[6] This means that in the event of an emergency, if a person makes a call to a provider while that provider is experiencing a spike in call volume – either during periods of low call volume, when fewer interpreters are on duty, or during peak periods, when all available interpreters are processing calls – that provider may not be able to handle the emergency call for long periods of time, yet still be in compliance with the service level requirements recently imposed by the FCC. Having to wait long periods before an emergency call is answered is in fact more likely to occur when there is a national crisis or a weather

[6] The following examples demonstrate how this can be achieved:
Practical application of requirement #1 (80% of all calls answered within 3 minutes) = 5 days ASA at 7 Minutes, 20 days of ASA at 1.5 minutes, 6 days of ASA at 30 seconds. Hypothetically for those 5 days of ASA at 7 minutes, callers could be waiting for as long an hour or as short as few seconds, and the provider would still be in compliance with the 80%/3 minute requirement.
Practical application of requirement #2 (80% of all calls answered within 2.5 minutes) = 3 days ASA at 7 minutes, 25 days of ASA at 1.25 minutes, 8 days of ASA at 30 seconds. Hypothetically for those 3 days of ASA at 7 minutes, callers could be on hold for as long as an hour or as short as a few seconds, and the provider would still be in compliance with the 80%/2 ½ minute requirement.
Practical application of requirement #3 (80% of all calls answered within 2 minutes) = 6 days ASA at 5 minutes, 18 days of ASA at 30 seconds, 7 days of ASA at 1.4 Minutes. Hypothetically for those 6 days of ASA at 5 minutes, callers could be on hold for as long as 45 minutes or as short as a few seconds, and the provider would still be in compliance with the 80%/2 minute requirement.

disaster because during those times the provider will be overwhelmed by an influx of calls. If this occurs, a consumer that is locked into the services of a single VRS provider will be trapped: unable to access another VRS provider, tragically, he or she will be without any recourse to obtain 911 assistance. This regrettable outcome could also occur if the dominant provider's network is unintentionally shut down. CSD understands the need for a phase-in of the VRS answer speed, and appreciates the FCC's willingness to take actions that are designed to move VRS closer to its functional equivalency goals. But certainly this could not have been the result that the FCC intended when it adopted its expedited E911 schedule for VoIP providers, in the hope of ensuring the health and safety of all Americans. In order to ensure the health and safety of VRS users along with voice users of VoIP services, the FCC needs to prohibit any VRS provider from blocking the emergency calls of its customers through other providers.

III. Like VoIP Users, VRS Users Need NANP Call Back Numbers for Return Calls from PSAPs

The FCC's May 19, 2005 Report and Order made clear that the emergency call handling mandate for interconnected providers of VoIP services goes beyond simply transmitting calls to the appropriate PSAP. Because consumers expect VoIP services to function like regular telephone service, *enhanced* 911 services must be provided, so that PSAPs are able to return calls when necessary. It is for this reason that the FCC's new Order requires VoIP providers to provide the call back number that has been assigned to the VoIP users from the North American Numbering Plan (NANP).[7]

Just as a restricted, non-interoperable VRS system puts significant restraints on the ability of consumers to make outgoing emergency calls, this blockage creates

[7] In fact, the FCC used its plenary numbering authority over the NANP as one of the sources of its authority in its VoIP E911 Order. *VoIP E911 R&O* at ¶33, citing 47 U.S.C. §251(e).

difficult, and often insurmountable, barriers to the receipt of return (incoming) calls from a PSAP. As hearing Americans switch their voice communications from the PSTN to the Internet, they are continuing to be provided with NANP numbers, which will now be used to receive calls back from 911 emergency authorities. In stark contrast, there is no numbering scheme for VRS users that is consistent or at all functionally equivalent to the numbering scheme administered through the NANP. Although some VRS providers do allow each customer to be assigned a "telephone number" as an alias for his or her VRS IP address, this number is not usable across different VRS providers. The problem stems from the dominant provider, which has created a "closed" numbering network ("LDAP" or "lightweight directory access protocol") that only responds to incoming calls placed over its own network,[8] to the exclusion of all calls made by callers of *outside* providers. In other words, although that provider allows its customers to use their existing NANP phone numbers as an alias for their VRS addresses, it only allows these telephone numbers to work for other users of the dominant provider's equipment and service. When a hearing person tries to use a competitor's service to call a customer of the dominant provider through this exclusive database of restricted "telephone numbers," the call is blocked because the dominant provider does not permit the platforms of these other providers to have access to its LDAP. Thus, it is presently impossible for any customer of the dominant provider to have his or her call back number conveyed to the PSAP, and receive a call back through a different VRS provider. In this instance, it is not only the VRS customer that is restricted to the dominant provider's service; the PSAP is restricted as well. So long as VRS providers are permitted to maintain these types of

[8] This provider takes this action despite the fact that it does not truly "own" that network. Rather it only owns the equipment being used by its customers.

exclusivity agreements with their customers, VRS consumers will never have the comfort of knowing that they can receive a call back from a PSAP to the same extent as their hearing peers. Not only does this violate the mandates of the Americans with Disabilities Act, which require telecommunications relay services to be functionally equivalent to voice telephone services, it creates an intolerably dangerous situation in which PSAP operators are virtually barred from returning calls to VRS users of the dominant provider if those operators try to use the services of a VRS competitor.

In fact, the only way for an outside caller to "dial around" the dominant provider's LDAP is to access the recipient's IP address.[9] But IP addresses are dynamic, i.e., they can change every time a consumer goes on line. For this reason, deaf and hard-of-hearing users rarely know, or even have the capacity to know, what their IP addresses are at any point in time. Static IP addresses, which are more dependable, are expensive – costing upwards of $75 to $80 per address – and often are not even available for residential customers.[10] For these reasons, it is exceedingly complicated for PSAP personnel to ascertain a caller's IP address. The 911 operator would need to access sub-screens that are separate from the dialing screen, a lengthy multi-step process that could adversely affect the life and health of the caller when time is of the essence.

A restrictive VRS system creates a second problem with respect to the receipt of incoming calls: because this system forces users to acquire multiple video devices to

[9] The dominant provider opened its service to incoming calls made through competing VRS providers following the submission of the petition for interoperability. However, as discussed above, because of the way that the provider has set up its numbering scheme, the receipt of these incoming calls remains a near impossibility.

[10] For example, Time-Warner does not offer static IP addresses to its residential customers. In addition, VRS consumers already have to incur substantial monthly expenses for broadband service that well exceed the cost of regular telephone service. These consumers typically do not – nor should they have to – incur the added expense of purchasing a static IP address. For example, a single static IP address from Time-Warner Cable costs $79.95, compared to a dynamic IP address that is available for $44.95.

make *outgoing* calls through any VRS provider, incoming calls that are made by PSAP operators may never reach their intended destination. More specifically, customers of the dominant provider are only able to make outgoing calls through other relay services by acquiring more than one video device for their homes or businesses. (This is the equivalent of a hearing person having to purchase two separate voice telephones.) When a person has more than one VRS device, he or she must leave one device on and turn the other off in order to receive calls over the same Internet port. If the incoming call is directed to the device that is turned off, the call will never be received.

Moreover, even if the correct receiving device *is* turned on, the individual's Internet router may be configured in a way that directs all unsolicited incoming calls to the other device. If the incoming PSAP emergency call is routed to the wrong device by an Internet router, again the intended recipient will miss the call. Re-configuring the Internet router is complicated; most laypersons would not be able to accomplish this task without a technical expert.

IV. Allowing the Blockage of VRS Provider Internet Sites Can Impede the Flow of Information in Either Direction in a Major Emergency

In addition to having the capacity to make calls for help, consumers also need assurances that unsolicited incoming calls from emergency technicians and other individuals will be able to reach them. In the event that an emergency strikes a large area – e.g., an earthquake or terrorist attack – not having the ability to receive critical information from various sources conflicts with national emergency programs, including those involved in homeland security. One such policy involves the FCC's sponsorship of relay center applications for Telecommunications Service Priority, made to the Department of Homeland Security's National Communications System. Relay centers

whose applications are approved are to be given priority to restore their operations in the event that a disaster shuts down the telecommunications services in their areas. The Commission's decision to assist relay providers in receiving this priority reflects the FCC's efforts to significantly improve the ability of TRS providers to respond to the health and safety needs of their deaf and hard of hearing communities. Permitting individual video relay providers to block access in an emergency runs counter to this objective, and could result in a catastrophe, jeopardizing life and property, if the provider imposing the block is unexpectedly forced to shut down its operations, or if all its interpreters remain busy for extended periods of time (thereby delaying its answer speed).

The Commission notes that its obligation to promote the safety of life and property through the use of wire and radio communication stems from its general universal obligation contained in Section 1 of the Act.[11] The FCC explains that "as more consumers begin to rely on interconnected VoIP services for their communication needs," the Commission's recent action will ensure that the Commission can continue to "'further the achievement of long-established regulatory goals' to 'promot[e] safety of life and property."[12] Indeed, historically, the FCC has taken a significant interest in facilitating emergency access by all Americans, including Americans with disabilities. The FCC's TRS standards contain explicit mandates designed to ensure prompt responses to text-based TRS emergency calls. Similarly, in past years, the FCC has taken a number of steps to ensure both TTY and hearing aid access to digital wireless services in emergency situations.[13] All of these measures are undermined by a policy that allows a VRS

[11] 47 U.S.C. §151.
[12] *VoIP E911 R & O* at ¶29.
[13] *Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, Order, CC Dkt No. 94-102, RM-8143, FCC 97-402, 12 FCC Rcd 22665 (December 23, 1997);

provider to block its customers from using the services of other VRS providers in the event of an emergency. Indeed, it is illogical to allow a single provider to block such access when the provider not only does not own the network being blocked, but in fact receives payment through the federally administered NECA fund to provide its services.

V. Additional FCC Guidance is Sought to Achieve VRS Emergency Call Handling

By letter of June 22, 2005, CSD submitted a request to the FCC for further guidance with respect to the handling of VRS emergency calls.[14] In that letter, CSD noted that the many distinctions between VRS and traditional (TTY based) TRS, as well as between VRS and VOIP services, necessitate additional exploration before an FCC mandate for the handling of VRS emergency calls is put into place. We re-state several of these concerns below, and urge the convening of an industry-wide or government-industry working group to develop a detailed implementation plan for providing 911 services as part of VRS:

1. **Use of the Existing VoIP Infrastructure** – Probably the most efficient way of ensuring that VRS providers will be able to effectively respond to emergency callers would be for the FCC to issue a mandate that would result in VRS providers being able to use the existing numbering infrastructure already established by VoIP providers. If this were done, VRS users could be assigned regular, NANP numbers, which could automatically be identified by local PSAPS. By allowing VRS to ride the technology of

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Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, Fourth Report and Order, CC Dkt 94-102, FCC 00-436 (December 14, 2000) (requiring TTY access to wireless E-911 services); *Access to Telecommunications Equipment and Services by Persons with Disabilities*, Report and Order, CC Dkt. 87-124, FCC 96-285 (July 3, 1996) **(**extending mandates for the hearing aid compatibility of wireline phones by classifying all workplace, hospital, nursing home, hotel, motel and prison telephones as "emergency" telephones.")

[14] Letter from Karen Peltz Strauss, CSD, to Monica Desai, Consumer and Governmental Affairs Bureau, and Michelle Carey, Office of Chairman Kevin Martin (June 22, 2005).

VoIP providers, a separate system of registering VRS users (discussed below) would not be necessary to ensure functionally equivalent emergency services for these consumers.

2. **Registry of Users**. Included within the FCC's IP-enabled E911 Order is the directive for VoIP providers to obtain, and pass along to the PSAP, a "Registered Location" for each call.[15] The FCC's rules explain that VoIP providers must obtain the physical location where the service will be utilized from each customer, and that users must have methods of updating this information if they will use the service from more than one location. If the solution for VRS emergency access is not integrated with VoIP service handling of emergency calls as proposed above, there will need to be other ways to acquire and maintain this information from VRS users. One way would be to create a VRS user registry, either jointly across all providers or by individual provider. CSD believes that a single registry is highly preferable, as this will minimize confusion for deaf and hard of hearing consumers. A separate registry may be burdensome and confusing for these individuals because they would be forced to register with each and every one of the seven VRS providers.[16] If a user failed to register with all of the multiple providers, but then had an emergency situation necessitating use of one of the providers with whom he was not registered (for example, because his primary provider had long queue times or encountered technical difficulties), the user's emergency call might not be handled. In the future, the failure to register with each and every VRS provider that comes onto the market may also prevent an "automated" connection of the call to an appropriate PSAP.

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[15] *VoIP E911 R&O* at ¶¶37, 46.

[16] According to the FCC, additional companies frequently inquire about setting up VRS. This suggests that the number of VRS providers may change over time. Requiring consumers to keep informed about the existence of new providers and to provide each of those providers with their registered location information would be quite onerous.

For a joint registry to be launched, guidance from the FCC will be needed to determine how each of the VRS providers will access the registry and which neutral party will be responsible for the maintenance and availability of the registry. One option would be for the FCC to consult with industry to identify the requirements of such a system, and to then direct NECA to release an RFP for a neutral third party to administer the registry. It would be beneficial for the FCC to provide as well a timeline for the RFP, as well as guidance for the selection of the neutral party and implementation of the service. It would be expected that costs associated with implementing these new requirements would be recoverable through the Interstate TRS Fund.

3. **Technical Standardization**. Currently, each VRS provider develops its products under a broad array of technical standards or even on a proprietary basis. Providers may currently pick-and-chose what technical platforms they wish to support – for example, desktop units, PCs, Macintosh, etc. If each provider needs to be able to provide 911 service for any user and any user device, then at least some minimum default standard for video compression, session initiation and management protocols will need to be established.

4. **Validation of Location**. Some VRS users are mobile (or nomadic) users – that is, they use the same hardware in multiple locations. For example, a user may have a video camera connected to his laptop and use the same account for his VRS communication wherever he is (home, office, motel during travel, etc.). Guidance from the FCC is needed as to whether these users will need to create and use multiple profiles, dependent upon their location. In addition, CSD recommends that the FCC permit VRS interpreters to confirm a user's current location through dialogue prior to connecting to a

PSAP. Finally, current requirements for TRS centers, set to go into effect for VRS on January 1, 2006, dictate the automatic referral of incoming TRS/VRS calls to PSAPs. If this requirement goes into effect as scheduled, this might prematurely impose a greater standard on VRS providers than is required of VoIP providers. As noted above, at present, many VRS users do not have "numbers" that can be passed along to a PSAP. And even where VRS users do have assigned "numbers" (rather than IP addresses), those assignments are often "made up" and may not correlate to the appropriate NPA-NXX for that user's location. Further, even if those numbers happen to mirror the NANP number assigned to the user for its PSTN service, there currently exists no automated passing of a VRS user's ANI or ALI to the PSAP. It would seem that at least initially then, self registration by users, rather than automatic identification of the caller's number and location, should be acceptable for VRS providers to the same extent this solution will be permissible for VoIP providers.

5. **Audio Channel**. In a conventional TTY-based TRS model, an audio channel is not directly available between the consumer and the PSAP. However in a VoIP setting, this is available. PSAPs occasionally use the audio channel to help provide information for pin-pointing the user location, as well as for providing important safety-related information to the first responders. In an emergency setting, guidance is needed as to whether an audio channel must be supported and passed to the PSAP in a voice carryover configuration. We propose that the FCC turn to the National Emergency Numbering Association (NENA) and/or the Association of Public-Safety Communications Officials (APCO) to provide guidance on how best to handle callers who choose to use VCO through VRS.

The above list is by no means exclusive; rather this provides a starting point to identify some of the issues that VRS providers may have to confront when trying to handle emergency calls. Similar issues apply to text-to-voice based relay services that travel over the Internet.

VI. Conclusion

Deaf and hard of hearing people who use VRS need the same ability to access emergency services, both with respect to incoming and outgoing calls, as is available to the general public. The approach adopted by VoIP providers for the mainstream public promises to be one that parallels existing E-911 capabilities over the traditional PSTN with respect to the ease of consumer and PSAP use; the same should and must hold true for Internet-based relay services, including VRS.

The FCC has sought comment on whether it needs to adopt regulations in addition to those imposed by its VoIP E911 Order, in order to promote the health and safety of Americans through effective E911 service.[17] CSD believes that the answer to this is a resounding "yes." Acting under its obligation to ensure functionally equivalent relay services under section 225, its obligation to provide universal service under section 1, its general obligations under Sections 251(1)(2) and 255 to ensure accessible network and services, and its plenary numbering authority under section 251(e), the FCC should: (1) prohibit blocking of VRS Internet addresses and video relay services by any VRS provider receiving compensation from the NECA Interstate TRS Fund, (2) require use of the NANP for VRS providers to ensure easy call backs from PSAPs, and (3) respond to the various technical issues listed above, including the those related to the use of the

[17] VoIP E911 R&O at ¶59.

existing VoIP infrastructure for VRS, establishment of a joint user VRS registry, technical standardization, validation of location, and the need for an audio channel.

Respectfully submitted,

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